

Title: Parent Adoption of School Communications Technology: A 12-School Experiment of Default Enrollment Policies

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Abstract Body

Background / Context:

Providing parents access to their child's grades, missing assignment information, or personalized teacher suggestions has been shown to improve parental engagement and increase student achievement for low-income, minority students (Bergman, 2013; Kraft and Rogers, 2014). Making this information available to parents online is one important way to inform families, but many low-income parents do not log in to check their child's grades online; families may have difficulty accessing the Internet, face language barriers, or not have ready access to their account information (Bergman, 2014; Lott, 2001).

One potential solution is to make actionable information accessible to parents via text messages. Text messages have several benefits over online access alone: they overcome insufficient Internet access, they obviate the need for parents to track account information, and they allow for timely delivery of useful information. Importantly, these messages can be automated easily and scaled across a school district at very low cost.

This project aims to test an automated, scalable text-message system designed to improve outcomes for low-income students in grades 6-12. More generally, this project has implications for how school districts target parent communications, and the policies districts adopt when deploying new technologies designed to improve student achievement. It will also provide insight into whether the students of parents who explicitly request this service benefit more or less than students of parents who do not request it.

Research Questions:

1. Does sending regular, actionable text-messages to parents regarding their child's academic performance, including grades, upcoming tests and missing assignments, improve student performance?
2. Does offering parents the opportunity to opt-out of receiving these messages increase enrolment relative to offering parents the opportunity to opt-in?
3. Does offering parents the opportunity to opt-out of receiving these messages increase student performance relative to offering parents the opportunity to opt-in?

Setting:

The study involves students and their parents/guardians attending middle and high schools in 12 middle and high schools in a large urban school district.

Participants:

The study involves 6,976 students enrolled in grades 6 to 12 in 12 schools in a large urban school district in the 2014-2015 school year. Approximately 58% of students in our sample are enrolled

in middle school and 42% in high school. Roughly half of the students are female. In terms of ethnicity, 81% of students are Black, 16% are Hispanic, and 2% are White.

Research Design:

Students were randomly assigned to one of three conditions (in unequal proportions decided ex ante):

- a Control group that received status-quo school communications
- an Opt In Group that automatically didn't receive the service, and needed to opt-in to receive the service, if desired
- an Opt Out Group that automatically received the service, and needed to opt-out to not receive the service, if desired.

Of the 6976 students in our sample, 2,673 (38%) were assigned to the control group, 2,705 (39%) to the Opt Out group, and 1,598 (23%) to the Opt In group. The sample was stratified by gender, GPA at baseline, attendance at baseline, and grade level.

Students received the service beginning in late January 2015 through the end of the school year.

Data Collection and Analysis:

This study incorporated various data sets pulled directly from the administrative records of the school district. The data sets included student demographics and enrollment data, guardian contact information, attendance data, behavior data, and academic performance data (including assignments and final grades). We were also able to collect information on parents and students daily activity in the "parent portal". The "parent portal" is an information system that allows parents to view their child's grades, attendance, and missing assignments in real time as teachers update it.

Data analyses were conducted using OLS regressions to generate treatment effect magnitudes. The primary outcome of interest was students' academic performance between the day after the service began and the end of the school year.

Findings / Results:

We find that parent adoption is nearly zero for the opt-in group – despite the opt-in procedure requiring just one text reply, only 4% of parents actually opted in. Meanwhile, 96% of those in the opt-out group remained enrolled in the communication technology through the end of the school year.

When looking at outcomes, we find that the treatment had a positive impact on grades. ITT estimates indicate that being assigned to the Opt Out group increased grades by 0.06 standard deviations for Term 3 and in 0.04 standard deviations for Term 4. Overall, grades increased by 0.05 standard deviations in Terms 3 and 4, with a 5 percent significance level. This equals an increase in grades of roughly 1.1 percentage points (or 0.061 GPA points). If a student takes a

typical load of five courses, this would mean that, on average, one of her course grades improved by a third of a letter grade (e.g., from C+ to B- or from B- to B).

We expect ToT effects to be significantly higher than ITT estimates because of imperfect compliance. Our data indicates that only 60% of parents in the Opt Out group actually received the service. This was a consequence of not all parents having an active cell phone where we could send information. At the same time, our records indicate that some of the schools decided to send messages to all of their students. Because the schools attempted to reach 24% of students in the control group, and assuming that roughly a 60% of them should have active cell phones (based on what we observe in the Opt Out group), we believe that 14.4% of students in the control group received the service. Based on this, we believe that our ToT estimates should be on the order of 0.1 standard deviations. This equals an increase in grades of roughly 2.2 percentage points (or 0.122 GPA points). If a student takes a typical load of five courses, this would mean that, on average, two of her course grades improved by a third of a letter grade (e.g., from C+ to B- or from B- to B).

As could be expected, there is no impact on grades of being assigned to the Opt In group. Nor do we observe a difference in grades for the Opt Out and Control group in Terms 1 and 2 since that time period preceded the execution of this experiment.

When looking at attendance we observe no impact of the treatment on the probability of missing a class. In our sample, students missed at least one class on approximately 17% of school days, and this is roughly the same across the three groups. The same is true for parents' and students' logins to the "parent portal" and students' behavioral outcomes, where we observe no differences across groups.

Conclusions:

These findings show that empowering parents with actionable and timely information can improve student achievement, and that student outcomes are not maximized by asking parents to actively enroll in information programs; rather student outcomes are maximized by automatically enrolling parents in information programs and offering them the opportunity to opt-out. More generally, this research has implications for how school districts target parent communications, and the policies districts adopt when deploying new technologies designed to improve student achievement.